

Diagnosis and prognosis of patients with palpitations

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Weber BE, Kapoor WN. Evaluation and outcomes of patients with palpitations.

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Research question

What are the causes of palpitations, and are the diagnostic tests used to determine them useful? What are the outcomes of patients with palpitations?

Type of article and design

Prospective cohort design. Evaluation of diagnostic criteria for the causes of palpitations and of prognoses for patients with palpitations.

Relevance to family physicians

Palpitations are among the 10 most common symptoms seen in primary practice. They occur in approximately 16% of general medical outpatients.¹ Surprisingly little is known, however, about their origin, natural history, and eventual outcomes. Palpitations are described in a variety of disorders ranging from cardiac diseases to psychiatric conditions.² As a result, patients with palpitations often undergo several diagnostic tests and referrals only to remain uncertain of their diagnosis. Those of us working in primary care recognize the heightened anxiety of patients suffering from palpitations who are understandably concerned about a "malfunctioning heart."

The authors of this study state that no studies have described the spectrum of causes or the usefulness of diagnostic tests for evaluating palpitations. Also, the outcomes of patients with palpitations have been poorly described. Evidence to support our diagnostic "intuition" and treatment decisions would be helpful. We see palpitations often and need to know which patients require intervention and which patients we can simply reassure. It would be helpful also to know what happens to patients with no clear cause for their palpitations.

Overview of study and outcomes

One hundred ninety patients presenting with a complaint of palpitations to the University of Pittsburgh Medical Center between January and August 1991 were enrolled in this prospective cohort study. The study did not distinguish between referred and nonreferred patients (from emergency departments, medical and surgical inpatient services, or medical clinics); however, patients presenting to the psychiatric emergency department or admitted directly to the psychiatric service were not included in the study. It is not clear whether these patients had previous psychiatric diagnoses and thus served as their own "referral" to these services.

Inclusion criteria were palpitations as a chief complaint for seeking medical care or palpitations as one of the chief complaints during a routine visit to a physician. Patients were excluded if they were younger than 18 years, were known to be aphasic or demented, or were unable to speak English. Patients enrolled in the study underwent a structured clinical interview and psychiatric screening. Physical examination results in which diagnostic tests were ordered by primary physicians were abstracted from patients' charts. Each patient's palpitations were assigned a "diagnosis" based on criteria previously determined by consensus of the authors. Trained interviewers followed up patients by telephone at 3 and 6 months and, for final follow up, at 9 or 12 months. Outcomes measured included recurrence of palpitations, new cardiovascular events and mortality, and morbidity specific to the palpitations.

Results

A cause of palpitations was determined for 159 (84%) of the 190 patients: cardiac for 43%, psychiatric for 31%, miscellaneous (eg, medication, thyrotoxicosis, caffeine, cocaine, anemia) for 10%, and unknown for 16%. History, physical examination, and electrocardiogram or laboratory data determined 40% of the causes. Six clinically meaningful predictors of cardiac cause of

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palpitations ($P < 0.05$) were determined: older age (older was not defined; subjects' ages ranged from 18 to 87), male sex, description of an irregular heartbeat, history of heart disease, palpitations lasting longer than 5 minutes, and fewer associated symptoms. The most associated symptoms were found in patients with palpitations of psychiatric origin.

The 1-year mortality rate was 1.6% (95% confidence interval [CI] 0% to 3.4%), and the 1-year stroke rate was 1.1% (95% CI 0% to 2.6%). Within the follow-up period, 75% of patients had recurrent palpitations; however, 89% reported their health was the same or improved compared with when they enrolled in the study. At 1-year follow up, 19% of patients reported their work performance impaired, 12% reported missing days of work, and 33% reported accomplishing less than usual work at home.

Analysis of methodology

The diagnostic criteria for the cause of palpitations for this study were developed after an extensive literature review and are remarkable for their scope and hierarchical organization. Use of these criteria to assign a cause for the palpitations of each patient is well explained and is unlikely to be biased despite the principal investigators' unblinded consensus assignment. (Readers with a real interest in the causes of palpitations would find the appendix to this article interesting.) The study's population sample presumably is representative of patients seen in primary care, having a broad age range and no notable sex or educational biases. The intake process was not well described; patients seen in the psychiatric emergency department or admitted directly to the psychiatric service were not included; therefore, palpitations of psychiatric cause could be greatly underrepresented. (Palpitations are the most common somatic symptom of panic anxiety.¹)

The investigators did not limit their cohort to patients with new onset palpitations because patients often could not define the first onset of symptoms. The authors thought their findings were relevant, however, because patients' presentations reflected the reality of clinical practice.

One-year follow up was completed for 96% of subjects, but 3, 6, 9, or 12 months' follow up could be too short to evaluate outcomes such as mortality due to cardiac or cerebrovascular events. Therefore, although the results are reassuring, they are really reassuring only in the short term.

Application to clinical practice

This study suggests an approach to palpitations that might be helpful in dealing with this common condition.

For at least one third of patients in this study, we might consider a panic or anxiety cause first. For those who do not fit a psychiatric diagnosis, a careful history and physical and ECG examinations might be helpful. Predictors of cardiac disease include increased age, male sex, description of an irregular heartbeat, palpitations lasting longer than 5 minutes, history of heart disease, and few associated symptoms.

Prognosis in this study was very reassuring, but only for the first year. Quality of life of patients suffering from palpitations (eg, work days missed, productivity at work or home), however, was improved, and such improvement, though often unconsidered, is important.

Bottom line

For approximately 40% of the patients studied, the cause of palpitations was found through initial evaluation: history, physical examination, and ECG and laboratory tests. The follow up is reassuring in that it indicates an excellent prognosis for patients with palpitations, but it is reassuring for only 1 year. Morbidity from palpitations was worse than expected and should force us to reconsider the notion that once we are satisfied as clinicians that the cause of palpitations is benign, or not "physical," our job is done. This is especially true for panic disorder and reflects the importance of "the heart" to patients. Finally, for patients with a history of coronary artery disease, if palpitations last longer than 5 minutes and beats are "irregular," we should investigate further. ♦

References

1. Kroenke K, Arrington ME, Mangelsdorff AD. The prevalence of symptoms in medical outpatients and the adequacy of therapy. *Arch Intern Med* 1990;150:1685-9.
2. Weitz HH, Weinstock PJ. Approach to the patient with palpitations. *Med Clin North Am* 1995;79(2):449-56.

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